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"A Sociolinguistic Look at Intrusive r"

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Abstract: This paper will look at the use of intrusive r in different varieties of English across the English-speaking world. The main purpose of the paper will be to examine how native speakers of English use intrusive r and how this usage correlates with sociolinguistic factors like social class, age, gender and level of education. With this aim in mind, a range of empirical studies conducted from the 1970s onwards has been selected to illustrate the analysis. The discussion of the results of these studies has confirmed two of the ideas we had before we embarked on writing this paper. First, that varieties of English worldwide are shifting towards greater rhoticity, and second, that not only does a negative correlation between the occurrence of intrusion and socioeconomic status exist, but that speakers who pronounce intrusive r are also the target of social stigmatization.

Keywords: intrusive r, sociolinguistic factors, rhoticity, varieties of English.

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A Sociolinguistic Look at Intrusive r

0. Introduction

Despite the many studies regarding the emergence of intrusive r, the three main theories proposed to explain this phenomenon have failed to account for the variability found across different speakers and varieties of English. In most of the literature on this subject, the process of emergence of intrusive r has been associated with that of linking r, the realisation of the r in prevocalic position in those words where the r is etymologically present. However, the higher frequency of the latter in comparison to intrusive r is another relevant aspect that has yet to be accounted for (Soskuthy 62).

Firstly, the deletion-based accounts assume that the underlying representation of both r-full words and r-less words include r. According to this theory, a rule causes the R~Ø alternation by deleting r before a consonant or a pause (62). Secondly, insertion-based analyses claim that r was initially dropped in pre-intrusion varieties of English. However, this was followed by a process of rule inversion by which the underlying forms "represented the inverse of the former state" (Hay & Sudbury 800), making it impossible for the speaker to differentiate between those words that have r in their spelling and those that do not. Finally, analogy-based approaches hold that the phenomenon of intrusive r is not arbitrary and occurs as the result of a process of extension, by which the relationship between R-full forms and the sound that follows is extended to R-less forms, leading to the R~Ø pattern. These linguists have also claimed that as the occurrence of intrusive r gradually increased in pre-intrusion dialects, the occurrence of rhotic forms went down (Soskuthy 265).

While some of these approaches have left the door open for other factors, namely social class, gender and age, to be considered as relevant in the study of intrusion and its variability, their full implications have not yet been addressed in depth. Therefore, the aim of this paper will be to look at the main sociolinguistic approaches to the study of intrusion, by considering the evidence given by research on this field.

1. New Zealand English

Several publications have pointed to the correlation between the occurrence of intrusive r and sociolinguistic factors in New Zealand English. Firstly, Hay and Sudbury conducted an analysis of /r/-sandhi, i.e. both linking r and intrusive r, based on the recordings of New Zealanders born between the years 1860 and 1925, a period that witnessed the formation of New Zealand English. The data were taken from the Mobile Unit Corpus, containing recorded interviews with around 300 speakers from the late 1940s, and the Goodyear Corpus (now owned by the University of Canterbury in New Zealand), consisting of recordings of New Zealanders "made between 1850 and 1900 as part of an oral-history research project by Rosemary Goodyear" (Hay & Sudbury 804).

Their main finding regarding the speakers' sex was that the occurrence of /r/-sandhi in male speakers was slightly higher than in female speakers. Hay and Sudbury provide two plausible explanations for this. To start with, the use of both linking r and intrusive r at the

time was on decline, while non-rhoticity was on the increase. Hay and Sudbury argue that, given the sociolinguistic evidence that women are likely to adapt to linguistic change far more easily than their male counterparts, female speakers of New Zealand English may have abandoned intrusion earlier than male speakers. Then, perhaps more speculatively, the person conducting the interviews was a male speaking in a very formal style, which may well have led to women trying to elevate their speech style, and also to "the conscious avoidance of stigmatized phenomena, of which /r/-sandhi may have been one" (809–810).

Secondly, Hay and Warren carried out an experiment among 16 students of the University of Canterbury, all of them being non-rhotic speakers of New Zealand English. These students were asked to read aloud a total of 134 sentences, 48 of which targeted intrusion, and were recorded on Digital Audio Tape. The data set analyzed in this study only included four males, which meant that any observation regarding the correlation between gender and intrusion would have been tentative at best.

However, Hay and Warren also ranked the students according to their parents' Ellie-Irving score, this being an index of social stratification, with 6 the lowest score and 1 the highest (49–50):

We found the Ellie-Irving score for the father to be a significant predictor of an individual's overall rate of intrusive /r/. Individuals with fathers with lower Ellie-Irving scores (and so higher socio-economic status) produced fewer instances of intrusive /r/ (Spearman's $\rho = 0,56$, $p < 0.05$).

Despite the Ellie-Irving score for the mother of the students being also recorded, Hay and Warren failed to establish any connection between the socio-economic status of the mother and the occurrence of intrusion (50).

Finally, Hay and MacLagan conducted a linear regression analysis based on the set of data collected by the former and Warren eight years earlier in 2002. They used Praat, a computer program developed by Paul Boersma and David Weenink that allows scientific analysis of speech (6):

For those tokens which were analysed as containing an intrusive /r/, we also took an F3 measurement at the lowest point of F3 during the /r/. F3 is the most salient acoustic correlate of /r/. Acoustic analysis was carried out using Praat using the standard settings (25 ms analysis frame, gaussian window, 10 pole LPC filter).

This analysis led Hay and MacLagan to the conclusion that intrusion is a gradient sociolinguistic variable that differs in frequency of occurrence, as well as in degree of realization. In other words, the use of intrusive r proved to act as a sociolinguistic variable in New Zealand English when it occurred after words like "claw" and "plough." In contrast, the realization of r after "sofa" by the participants of the study did not show any strong effects of social class. Using Praat, Hay and MacLagan also looked at the phonetic quality of the speakers' intrusive r and found a strong correlation between social class and the degree of constriction in the vocal tract. Speakers from higher social classes produced higher values of

F3, meaning that their intrusive /r/s were articulated with little constriction. In turn, speakers with higher Ellie-Irving scores (and so lower social status) produced much lower values of F3, which indicates a higher degree of constriction.

2. British English

2.1. East Lancashire

William Simon Barras collected data from speakers in five different communities in East Lancashire and the Greater Manchester area. He devised a list of sentences to be read aloud by participants, which contained all possible phonological contexts for the realization of intrusive r. The study also included an elicitation task, in which participants were shown place names and various suffixes on a computer screen and were later asked to combine a place name and a suffix to make a word (81–82)–. Finally, informal conversations were also held with the participants before the reading and elicitation tasks:

“In addition to the reading and elicitation tasks, I aimed to record a reasonable length of spontaneous conversational speech from each participant. In practice, I usually managed to record over an hour in each interview and adopted several strategies in order to encourage my participants to speak in a reasonably informal conversational speech style (p.89)

Results showed a great degree of variation in the occurrence of intrusive r depending on the task performed by participants, which can be observed in Table 1. In other words, the sentence task did not favour the occurrence of intrusion while both the elicitation and conversation tasks did so. According to William Simon Barras, this degree of variation might well be accounted for by the stigmatization of intrusion in many non-rhotic varieties of English, including the variety of English spoken in East Lancashire. The sentence task, then, creates an environment in which “speakers are aiming at an overtly prestigious ‘correct’ form of speech,” trying to avoid speech patterns which are often the subject of prescriptive comments (114).

The fact that participants were given a written stimulus to carry out this task may well have also led to a lower production of intrusive r, since r was obviously not orthographically present. Moreover, speech was produced at a much slower pace in comparison with the conversational task, this way introducing intonation breaks and pauses that remove some of the potential sandhi environments and therefore affecting the production of both linking r and intrusive r.

Overall, Barras found a negative correlation between the production of r-sandhi and the level of rhoticity. The only exception was the speakers from Prestwich, who showed a high level of non-rhoticity and yet disfavoured the production of linking r. According to the author, this might suggest that the Prestwich speakers “have not yet gone through a process of reanalysis of the rule inversion,” and are still operating with a phonological system that disfavours the production of r-sandhi (187).

Some variation was found across different towns, with Rossendale and Accrington showing the highest rates of intrusion and Bury and Prestwich the lowest. Moreover, younger

speakers in Rossendale and Bury were more likely to produce intrusive r in word-internal intrusion environments than the older speakers living in the same places (141–150). The results of the study also showed a much higher degree of variation across task types and age groups regarding the production of intrusive r than in the case of linking r.

2.2. Received Pronunciation

Several empirical studies have observed the usage of intrusive /r/ in RP (Received Pronunciation). As far as back as 1975, Lewis made remarks on both linking r and intrusive r usage by what he calls “General British English speakers.” What he found was that the use of intrusive /r/ was spreading rapidly among educated speakers of British English. For instance, Lewis pointed out that BBC newsreaders who often omitted linking r may yet show intrusion in word-internal positions, e.g. in drawing (37–42).

In 1984, Laurie Bauer from Victoria University of Wellington, New Zealand, conducted an auditory analysis of a total of 37 recordings made at the Department of Phonetics of the University of Edinburgh between the years 1949 and 1966. Hundreds of participants recorded an excerpt from “The Story of Arthur the Rat” and, finally, 37 RP speakers were selected to be included in the analysis (74). However, the recordings only contained two potential instances of intrusive r: “the idea of an immediate decision” and “they saw a young rat.” Despite the small size of the sample, Bauer was able to determine that women used intrusive r more often than men (76), suggesting also that this might be due to female participants in the study being on average considerably younger than male participants.

As of today, Mompeán-González and Mompeán-Guillamón have conducted one of the most extensive corpus-oriented analysis of intrusion in this variety of English. Their study looked at the sociolinguistic factors that account for variability in the production of intrusive r by BBC World Service speakers between the years 2004 and 2005. They found that intrusion is not a frequent phenomenon that occurs in the speech of BBC newsreaders. Table 2 illustrates that in the first sample, which comprised a total of 129 speakers, the occurrence of intrusion amounts to 32 % (52 occurrences out of 165 potential instances of intrusive r). In the second sample of 61 BBC speakers, the occurrence of intrusion rose to 33%, intrusive r being realized in 49 out of 148 potential cases (749).

From the set of data gathered by Mompeán-González and Mompeán-Guillamón, it can also be inferred that the frequency of occurrence of linking r is considerably higher than that of intrusive r: 58% compared to 32% in the first sample and 59% to 33% in the second. In their conclusion, they pointed to the stigmatization of intrusion as a factor that plays a significant role in its lower frequency of occurrence, suggesting BBC newsreaders may well have avoided intrusive r due to the existing preconceptions regarding its use :

The fact that intrusive /r/ may be stigmatized can be related ... to the sociolinguistic variable ‘level of instruction,’ particularly in relation to literacy levels. In this respect, speakers who have a higher level of instruction tend to use more prestigious forms and adjust more to linguistic norms than those with a lower level of instruction. Intrusive /r/ could be a non-prestigious phenomenon because, to the educated,

literate and somehow spelling-conscious, it may clearly appear to be a vulgarism.
(p.768)

The second sociolinguistic variable that was also considered in this analysis of intrusive r was gender. In comparison with males, females were found to show a similar frequency of intrusion, realising the r sound in only 7 out of 27 potential cases of intrusive r. Two possible explanations are given for this, the first one being that women tend to use intrusive r less frequently but men are more conscious of the stigmatization suffered by users of intrusive r and the second that women tend to imitate men's speech in media broadcasting, an industry overwhelmingly monopolized by men (755). In any case, the statistical difference between men and women regarding intrusion does not seem to be as significant as Mompeán-González and Mompeán-Guillamón initially hypothesized in the introduction to their paper.

Finally, Hannisdal looked at recent variation and change in RP phonetics by analysing a total of 30 hours of speech from 30 television news readers (15 of them being men and 15 women) from three different media broadcasters: BBC World, Sky News and ITV news. Both linking and intrusive r were considered in her analysis, with the latter found to be considerably less frequent than linking r, since intrusion occurred in only 32.6 % of the potential instances compared to 59.8 % of linking r (Table 3). This suggests that, as Mompeán-Guillamón and Mompeán-González (2009) put it, intrusive r has become a stigmatized phenomenon in RP and newsreaders consider intrusion as incorrect and non-desirable pronunciation.

2.3. **Sheffield**

Stoddart et. al. analyzed a total of ten hours of recordings conducted by two fieldworkers, the very Jana Stoddart and James Oldfield. These recordings were carried out in the year 1997 in various parts of the city of Sheffield and were later deposited in the National Centre for English Cultural Tradition at the University of Sheffield. A total of 24 informants took part in the study, who were also divided in groups according to their age:

The data were collected from a total of 24 speakers, the sample being divided into three age groups: from 12 to 30, from 31 to 55, 56 and over, four males and four females being recorded in each age group. Speakers were recorded responding to a questionnaire (...), reading a word-list, and in free conversation.(p.73)

As the authors' main aim was to compare this set of data recorded in 1997 with the material from the Survey of English Dialects (SED) recorded back in the years 1952 and 1953 in the area of Hillsborough in Sheffield, they carried out an in-depth analysis of the phonological features presented by informants in the 1997 sample. One of their main findings was that the production of both linking r and intrusive r was widespread in all age groups (76).

2.4. **Newcastle upon Tyne**

A large-scale analysis of intrusion by Foulkes was carried out using a corpus collected in the city of Newcastle upon Tyne, in the north-east of England. The samples, which included both word-list tasks and a conversational exchange that lasted around 50 minutes, were specifically selected to reflect "a broad cross section of the population in terms of age, sex and broadly defined socio-economic class" (*Rule Inversion in British English* 259).

A total of 32 adult speakers took part in the study. They were classified according to three criteria: age group (16–25 or 45–65 years), gender (male or female) and social class (middle class or working class). The results of the conversational task however showed that intrusive r is a rare phonological phenomenon in the Newcastle area. The recordings, which amounted to 13 hours of speech, only contained seven occurrences of intrusive r out of a total of 82 potential instances of intrusion, giving an overall appearance rate of just 8.5 % (264). The results also showed that intrusion is, in the majority of cases, displayed by speakers of a lower socio-economic status, 6 of the 7 tokens belonging to this social class category (265).

On the other hand, the word-list task, in which participants were asked to read aloud 28 sentences that contained potential occurrences of intrusive r, afforded surprising results. Out of all the participants who were told to read the trigger sentence "put a comma in it," 14 produced an intrusive r, 10 of them speakers with a middle-class background. This may indicate that intrusion is not perceived by these speakers as a marker of working-class status, but as a prestigious linguistic feature by which they can elevate their speech (266).

The data collected by Foulkes regarding intrusive r in Newcastle upon Tyne are, then, in deep conflict with previous research which suggested that intrusion was widely considered as a linguistic feature of working-class varieties of English. Foulkes suggests instead that although intrusion is not a characteristic of Newcastle's dialectal varieties, participants in the study might have been exposed to this phenomenon in media broadcasting and advertising, especially through BBC newsreaders with an RP accent. For this reason, intrusion might well be regarded as a linguistic form of prestige unconsciously employed by Newcastle's middle-class speakers (266).

2.5. **Derby**

In contrast with the city of Newcastle upon Tyne, where Foulkes found that the emergence of intrusive r correlated with both social and stylistic factors, the analysis of a corpus from Derby, a middle-sized city located in central England, led to very different conclusions.

Foulkes (*English /r/ sandhi* 77) gathered a total of 32 recordings corresponding to adult speakers who lived and grew up in Derby. As in the case of Newcastle upon Tyne, speakers were classified according to their age (16–25 years or 45–65 years), gender (male or female) and socio-economic status (working class or middle class). Participants were recorded for 50 minutes maintaining an informal conversational exchange and were then given a word-like task with potential instances of intrusive r.

The data collected by Foulkes, illustrated in Graph 1, showed that the average rate of intrusion in Derby was 57.3 % (55 of the 96 potential tokens). Remarkably, a total of 11 participants produced an intrusive r in all potential instances of intrusion. However, intrusive r remained an infrequent phenomenon compared to linking r among Derby speakers (82).

2.6. **West Yorkshire**

Although empirical data regarding this topic are yet to be collected, Judith Broadbent provided a theoretical model for the occurrence of r liaison in West Yorkshire, located in the north of England. She argued that, unlike in other non-rhotic accents like Received Pronunciation, speakers of West Yorkshire English, do not suppress intrusive r for socially motivated reasons:

It seems that to some degree intrusive /r/ is stigmatised in RP and it is subject to a consequent suppression. By way of contrast, no stigma is attached to intrusion by West Yorkshire speakers. (284)

Broadbent proposes instead not to reflect social variation in the analysis of intrusive r and to “abstract away from that sociolinguistic suppression” (285) in order to obtain a clear grammatical generalisation.

3. **American English**

In the year 2018, Jody Fish conducted a study among 50 speakers born and raised in the Greater Boston area. The focus of Fish’s study was to determine if the production of r among Boston English speakers was affected by gender, taking into consideration that rhoticity is widely believed to be on the rise in this variety of American English. Fish (1–21) found that despite the decline of non-rhoticity, the vast majority of speakers of Boston English remained non-rhotic, and that women were adapting to rhoticity more quickly than their male counterparts (37% presented rhoticity in comparison with 19% of men). Despite the fact that the article read by the 50 participants only contained one potential instance of intrusive r (West Virginia and North Carolina), Fish concluded that the occurrence of intrusion is very comparable in males and females, as both 3 males and 3 females pronounced the r in this case.

4. **Singapore English**

Ying-Ying Tan set about analyzing the presence of postvocalic r, linking r and intrusive r in Singapore English speakers and whether the occurrence of these three correlated with socio-economic factors. Although some studies have suggested that there is some degree of rhoticity to be found in the variety of English spoken in Singapore, Singapore English is widely considered as a non-rhotic variety (2–4).

Ying Tan recorded a total of 24 native Singapore English speakers, all of which were women whose ages ranged from 18 to 25. All the informants were Chinese Singaporeans and English-Mandarin bilingual speakers (5) and they were also pursuing post-secondary studies in Singapore at the time of recording. Participants were divided into three groups according to their level of education. The first group was formed by those who studied at one of Singapore’s universities. The second group consisted of students from the polytechnic, “an educational institution that provides more practical training for post-high school students who may not have qualified for university entrance” (6). Finally, the third comprised a

number of students from the Institute of Education (ITE), “an institution that provides apprenticeship-like training to post-high school students, and students are trained for jobs such as secretaries, mechanics, nursing assistants or office assistants” (6). The level of education and occupations of the parents of the participants were also recorded.

Informants were asked to read aloud a total of 50 sentences, which contained 25 potential instances of intrusive *r*, making it a total of 600 tokens. Results, as can be seen in Graph 2, showed that those speakers with a low social background, corresponding to those who studied at the Institute of Education and whose parents had little or no formal education, presented a much higher occurrence of intrusion than the other two groups. In contrast, undergraduate university students only produced intrusive *r* in 3,5 % of the sentences (12). This suggests a negative correlation between the production of intrusion in Singapore English speakers and their socioeconomic status.

Tan also carried out a perception test in order to determine the attitude shown by Singapore English speakers towards intrusion and rhoticity. 50 participants were asked to listen to a total of 12 utterances, chosen from recordings made earlier in the study. 4 of these contained instances of intrusive *r*, 4 contained an *r* in the postvocalic position and the other 4 consisted of instances where the orthographic *r* was not realized. Ying Tan analyzed the reaction from the participants according to four different categories: level of education, localness, desirability and intelligence (15–6). The answers given in the last three categories are shown in the graphs 3, 4 and 5 respectively.

56% of the respondents considered the instances of intrusion to be those of a local speaker, considerably lower than the samples of postvocalic *r* (76%) and of the lack of realization of the *r* (26.5%). In the second category, intrusive *r* was judged not to be a desirable linguistic feature by most participants (91%). In turn, postvocalic *r* and *r*(0) were widely considered as desirable with 61% and 51.5 % respectively. In the third category, speakers who produced intrusive *r* were widely considered to be unintelligent by 77% of the respondents, while speakers with postvocalic *r* and *r*(0) were judged to be much more intelligent (15–19).

Participants were asked to determine the level of education that speakers with intrusion might have. The outcome was consistent with the other three categories, since none of the 12 utterances were judged by any respondent to belong to a speaker who had completed their university studies. In contrast, 44% of the answers pointed to someone with a polytechnic diploma and 56% to an ITE diploma holder (Graph 6). Out of the three linguistic features analyzed in Ying Tan’s perception test, postvocalic *r* was the one that performed better in this category, as 71% respondents considered these utterances as those of a university student or graduate.

In a nutshell, this perception test, along with the study carried out by Ying Tan, proves that intrusion is a socially stigmatized linguistic phenomenon in this variety of English. Unlike postvocalic *r*, which was found to be a linguistic marker of prestige among speakers of Singapore English, those who produced intrusive *r* are regarded as less intelligent, less local and with a worse educational background.

5. Conclusion

This paper has looked at the main sociolinguistic factors associated with the production of intrusive r. A wide range of varieties of the English language spoken all over the globe has been considered, with the aim of giving the reader as clear a picture as possible of where the use of intrusive r stands today.

Firstly, in light of the studies considered earlier, it seems quite evident that gender does play a significant role in the occurrence of intrusion in many non-rhotic varieties of English. Despite the fact that Mompeán-González and Mompeán-Guillamón found virtually no difference between the occurrence of intrusive r in male and female RP speakers, both Foulkes and Fish found gender to be a factor that affects the production of intrusive r in the varieties spoken in Newcastle upon Tyne and Derby in the UK and Boston respectively, with women showing considerably lower rates of intrusive r production than their male counterparts. This might well confirm the theory that, since most non-rhotic varieties are shifting towards a greater degree of rhoticity, intrusion is declining and women are having fewer difficulties than men in adapting to these linguistic changes. The relation between gender and intrusive r, however, is yet to be studied in Singapore English, where the group of participants selected by Tan included only women, and in New Zealand English, where the sample chosen by Hay and Warren was too small to make any observations in this respect.

Secondly, most studies show quite a strong correlation between the occurrence of intrusion and the socioeconomic status of the speaker. In most cases, this correlation is negative, i.e. the lower socioeconomic status of the speaker, the higher occurrence of intrusion; Hay and Warren, for instance, discovered that the occupation of the father was a predictor of the occurrence of intrusive r in New Zealand English speakers. Furthermore, the social stigmatization of intrusion became evident in the study carried out by Ying Tan regarding Singapore English. Not only were working-class speakers more likely to pronounce the r in potentially intrusive contexts, but the perception test also showed that those participants who realized the intrusive r were deemed less intelligent and with a much more limited educational background.

In contrast, Foulkes' work seems to point us in a different direction. Whereas he found that Newcastle's working-class speakers were far more likely than middle-class speakers to produce intrusive r in spontaneous conversation, the latter showed a higher occurrence of intrusion in the word-list task. In contradiction to Mompeán-Guillamón and Mompeán González's findings, Foulkes attributed this to the influence of RP varieties and BBC newsreaders. His assertion that intrusion constitutes a linguistic marker of social prestige, however, lacks further supporting evidence. A perception test carried out among Newcastle speakers would possibly clarify whether those who produce intrusive r are thought to have a higher socioeconomic background.

Thirdly, another sociolinguistic factor this paper has taken into consideration is age. In spite of the fact that in two of the towns covered by Barras' analysis (Rossendale and Bury) younger speakers showed higher rates of word-internal intrusive r realization than older speakers, no significant differences were found in Stoddard et.al and Foulkes. In fact, Foulkes' analysis of Derby speakers suggests that age does not constitute a sociolinguistic factor that affects all social classes in the same way when it comes to the production of

intrusive r. Further research should be carried out in order to determine if this is also the case in other non-rhotic varieties of English.

Finally, it seems apparent that linguists have yet to account for the variability in the production of intrusive r in different stylistic contexts. The circumstances in which spontaneous conversational speech takes place are difficult to replicate in a controlled environment, which in turn makes it even more difficult to determine the role played by intrusion in casual speech. This is one of the biggest challenges that academics will surely face in future research on this subject.

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Appendix

Table 1. Analysis of intrusion according to the variable of task style in Barras.

TaskStyle					
factor	logodds	tokens	r/r+0	centered factor	weight
Conversation	0.628	198	0.333		0.652
Elicitation	0.167	2311	0.524		0.542
Sentences	-0.795	720	0.265		0.311

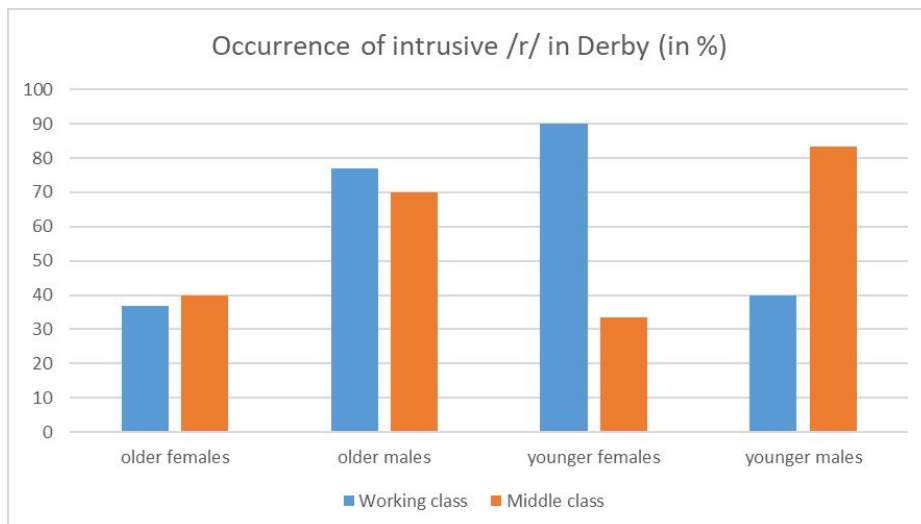
Table 2. Number of potential cases of intrusive /r/, actual cases and rate of actual cases in Mompeán-González and Mompeán Guillamón.

Intrusive r		
Potential cases	Actual cases	Rate of actual cases
165	52	32 %
148	49	33%

Table 3. This table shows the rates of occurrence of both linking r and intrusive r in the analysis carried out by Hannisdal (2010). N= number of tokens.

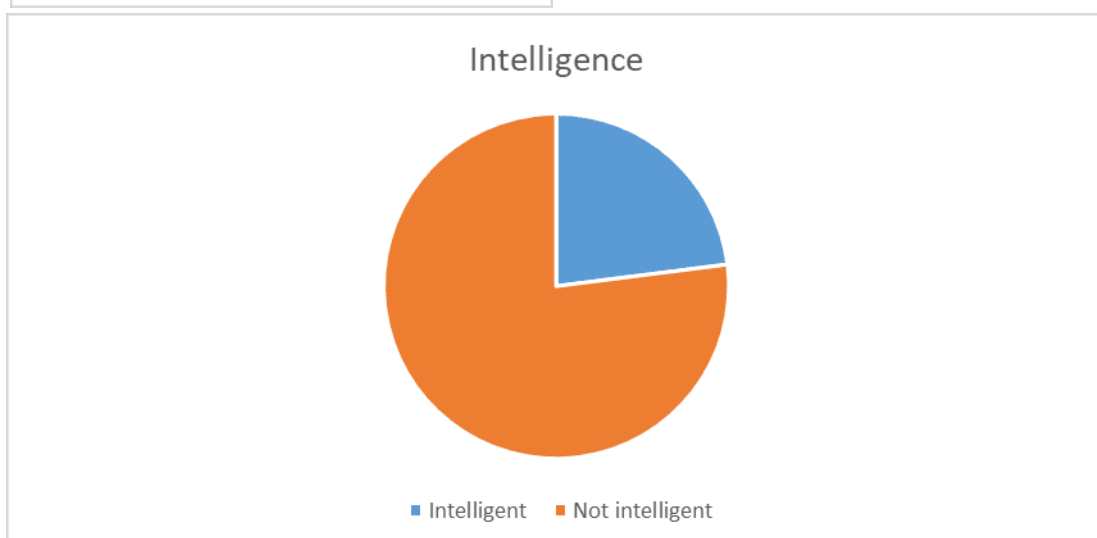
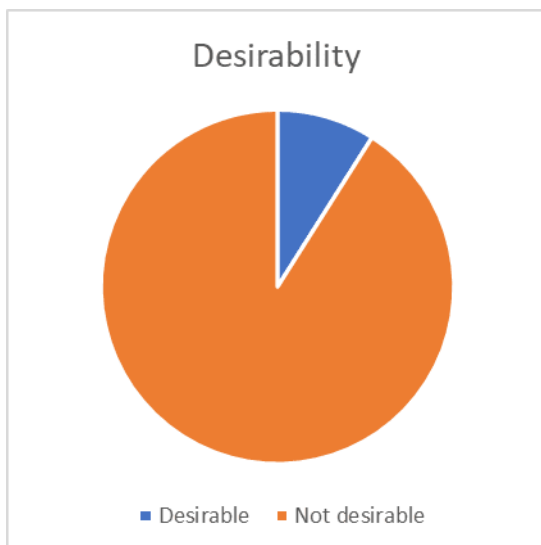
	Linking r		Intrusive r	
	N	%	N	%
/r/	3612	59.8	182	32.6
Ø	2433	40.2	376	67.6

Graph 1. This bar graph shows the occurrence of intrusion in each category according to the study performed by Foulkes upon Derby speakers.

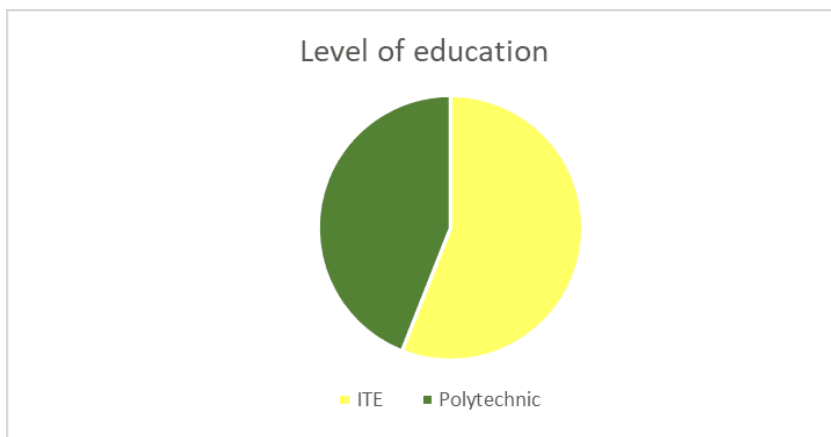


Graph 2. This bar graph shows the percentage of intrusion shown by the three groups of Singapore English speakers.

Graphs 3, 4 and 5. Judgement of localness, desirability and intelligence regarding intrusion among Singapore English speakers.



Graph 6. Judgement of level of education regarding intrusion among Singapore English speakers.



Bioprofile of the author

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